

NIST: Promoting U.S. Innovation and Industrial Competitiveness

Cita Furlani

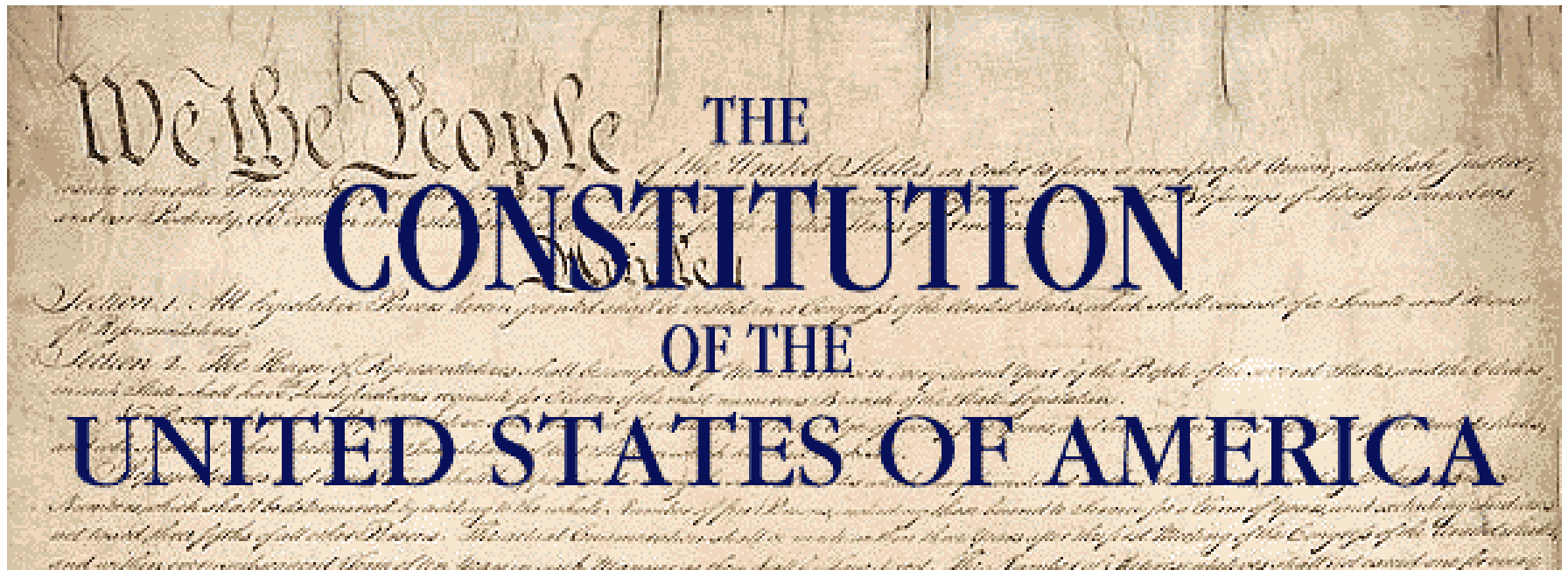
Director
Information Technology Laboratory
National Institute of Standards and Technology
U.S. Department of Commerce

NIST

**National Institute of
Standards and Technology**

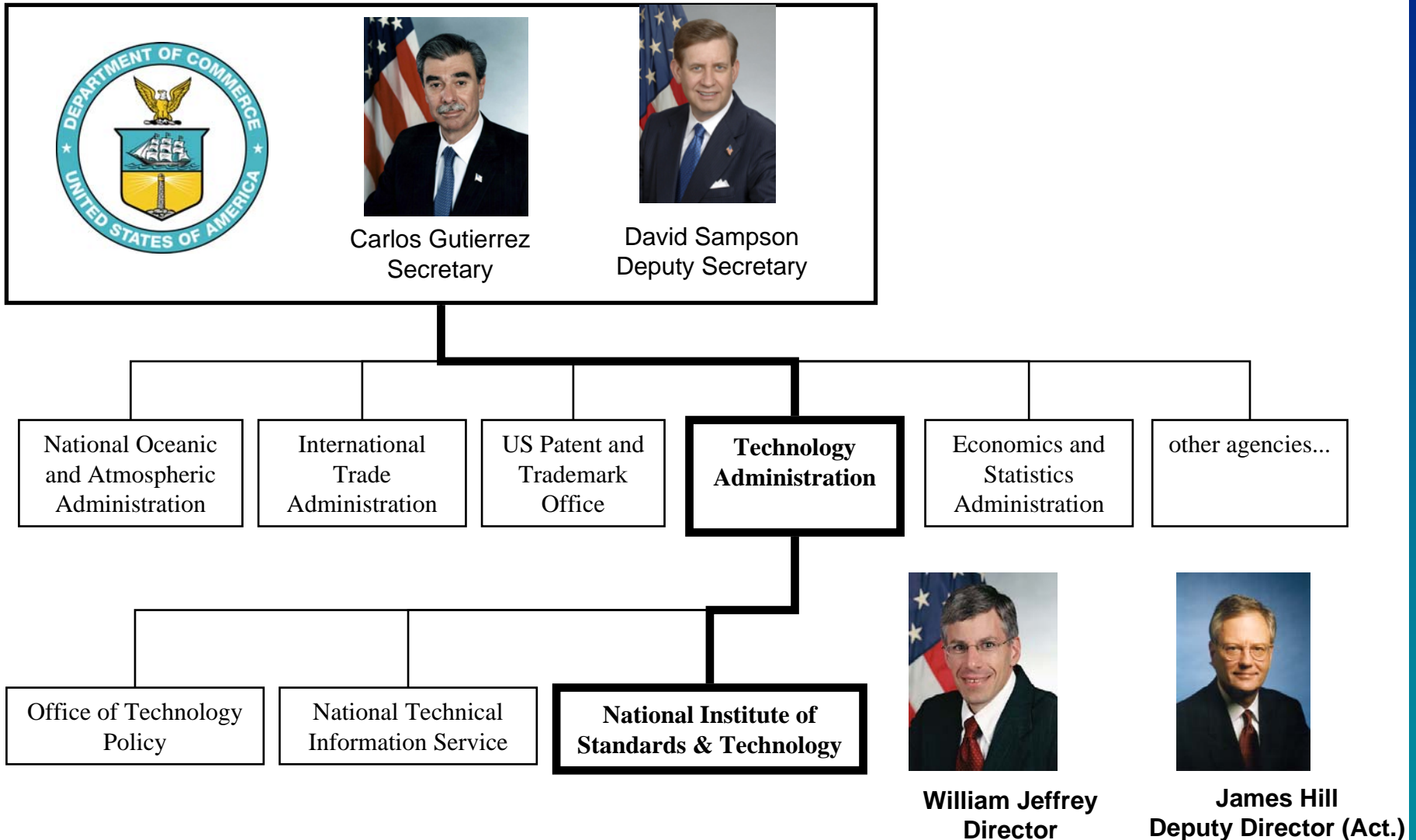
Technology Administration
U.S. Department of Commerce





Article I, Section 8: The Congress shall have the power to ...*coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures*

NIST is part of the Department of Commerce



NIST Mission

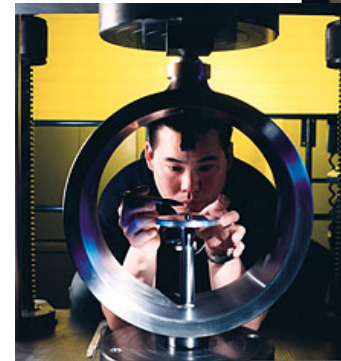
To promote U.S. innovation and industrial competitiveness by advancing

measurement science,
standards, and
technology

in ways that enhance economic security and improve our quality of life

NIST At A Glance

- 2,800 employees
(Gaithersburg, Maryland; Boulder, Colorado;
Charleston, South Carolina)
- 1,800 guest researchers
- 1,500 field agents
- 850 users of facilities
- NIST Laboratories
- Baldrige National Quality Program
- Manufacturing Extension Partnership



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NIST Products and Services Include

➤ Measurement Research

2,200 publications/year

➤ Standard Reference Data

90 types available

5,500 units sold/ year

➤ Standard Reference Materials

>1,300 products available

31,000 units sold/year

➤ Calibrations and Tests

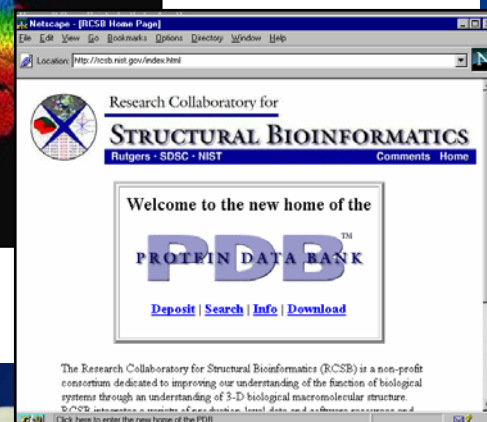
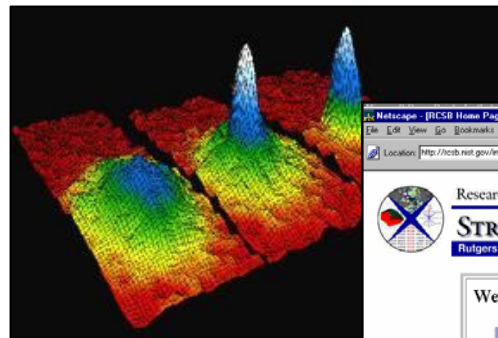
3,000 items calibrated/year

➤ Laboratory Accreditation

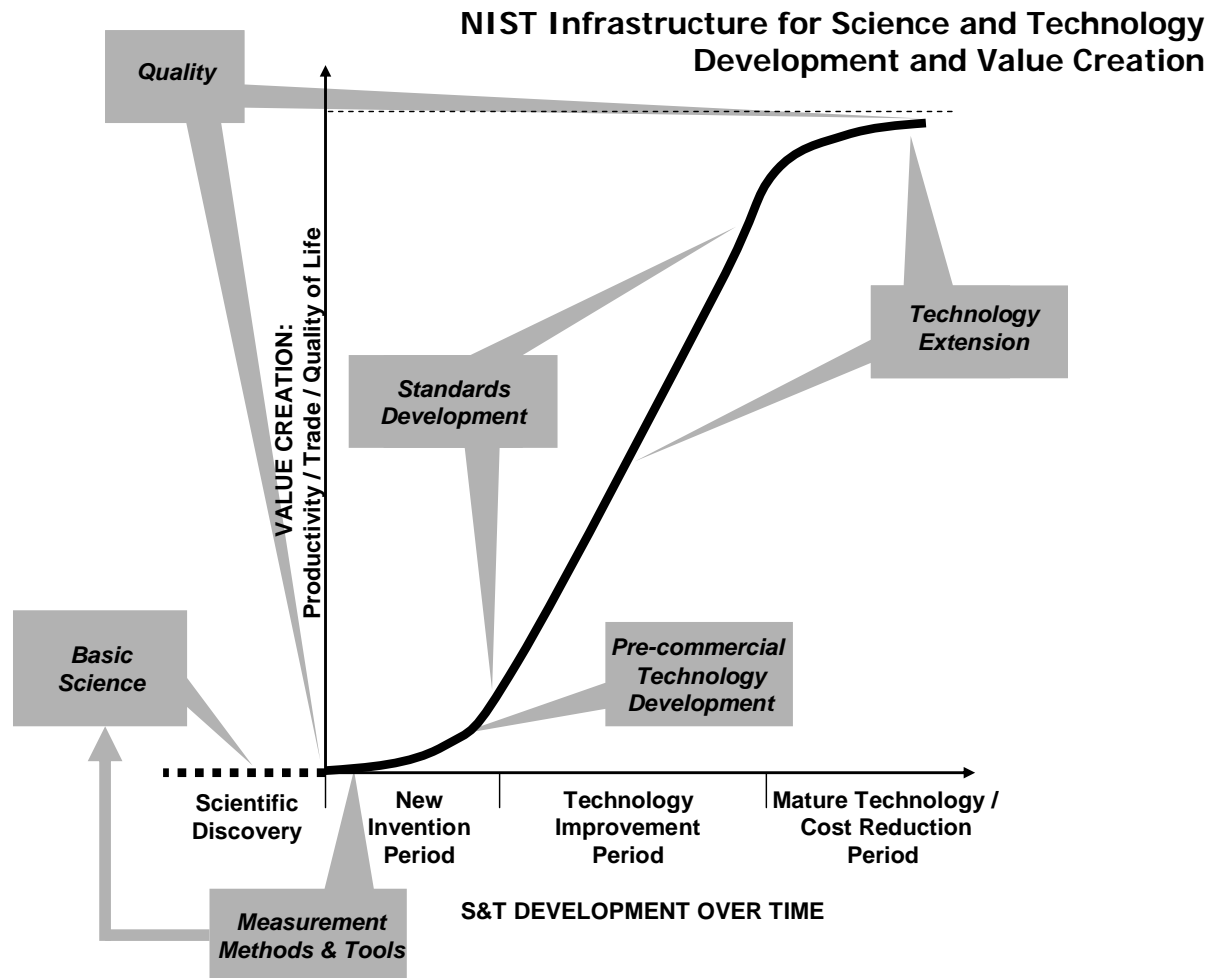
819 accreditations

➤ Standards Committees

440 NIST staff, 970 committees



NIST impacts every stage of innovation...



Why does NIST do it?

- ... to improve public safety and security
- ... to improve quality of life
- ... to advance manufacturing and services
- ... to facilitate trade

NIST provides innovation infrastructure to...

...improve public safety and security



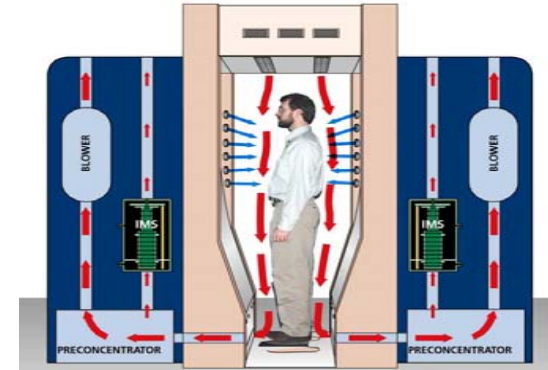
metal detectors



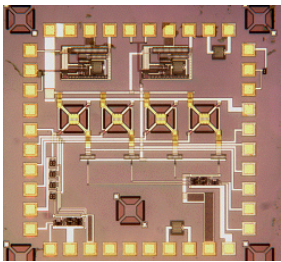
wireless
interoperability
among first
responders



smoke
detectors



Trace explosives
detection portal



novel sensors to
detect gases



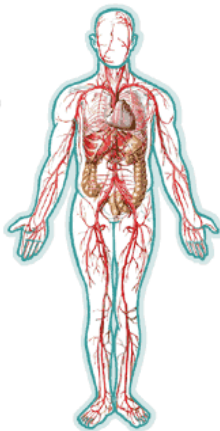
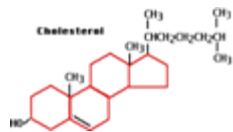
altimeter calibration

standards for
body armor



NIST provides innovation infrastructure to...

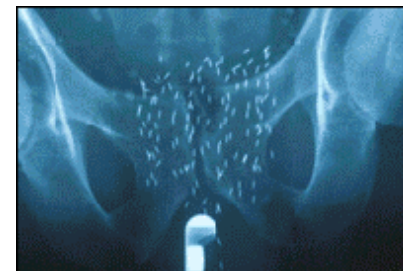
... improve quality of life



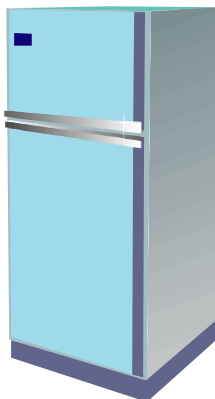
**cholesterol standard
reference material**



drinking water quality



**prostate and breast-
cancer treatment**



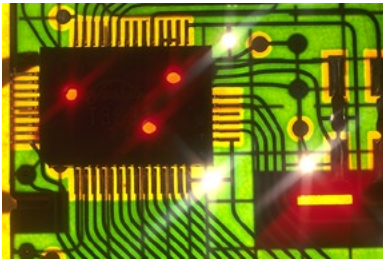
**database and
measurements
for alternative refrigerants**



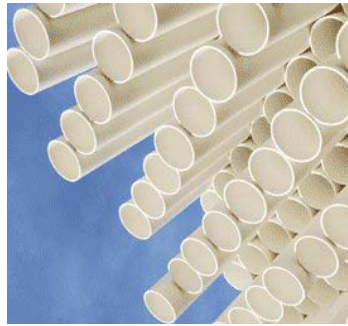
**standards for sulfur
in fossil fuels**

NIST provides innovation infrastructure to...

...advance manufacturing and services



**semiconductor
electronics**



**“lean manufacturing” of
plastics**



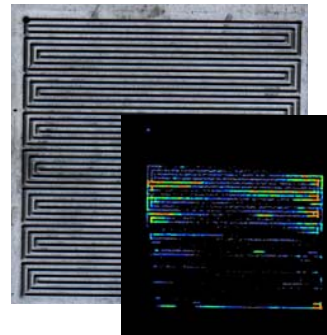
**automobile
manufacturing
interoperability**



pharmaceuticals



chemicals



**fuel cell
technology**



healthcare

NIST provides innovation infrastructure to...

...facilitate trade



**secure automated
banking**



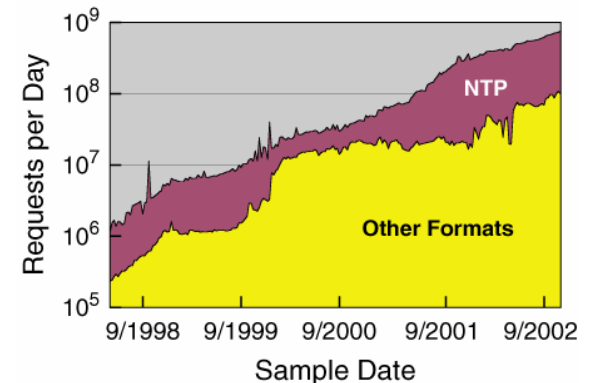
**volume and flow
standards**



**electric power
metering**



**international standards to
counteract TBTs**



**www.time.gov
billions of hits daily**

NIST has...

...world-class staff



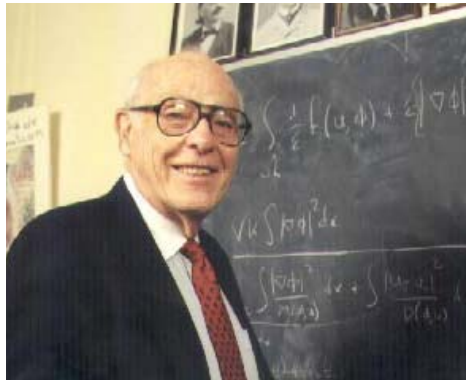
Jan Hall
2005 Nobel Prize
in Physics



Eric Cornell
2001 Nobel Prize
in Physics



Bill Phillips
1997 Nobel Prize
in Physics



John Cahn
1998 National Medal of
Science



Anneke Sengers
2003 L'Oréal-UNESCO
Women in Science Award



Debbie Jin
2003 MacArthur
Fellowship

NIST has...

...strong partnerships

Partnerships with industry, academia, and other government agencies have been an **integral part of NIST culture** since 1901.



University of Colorado



Hollings
Marine
Laboratory



American Telemedicine Association



INTERNATIONAL TECHNOLOGY
ROADMAP FOR SEMICONDUCTORS

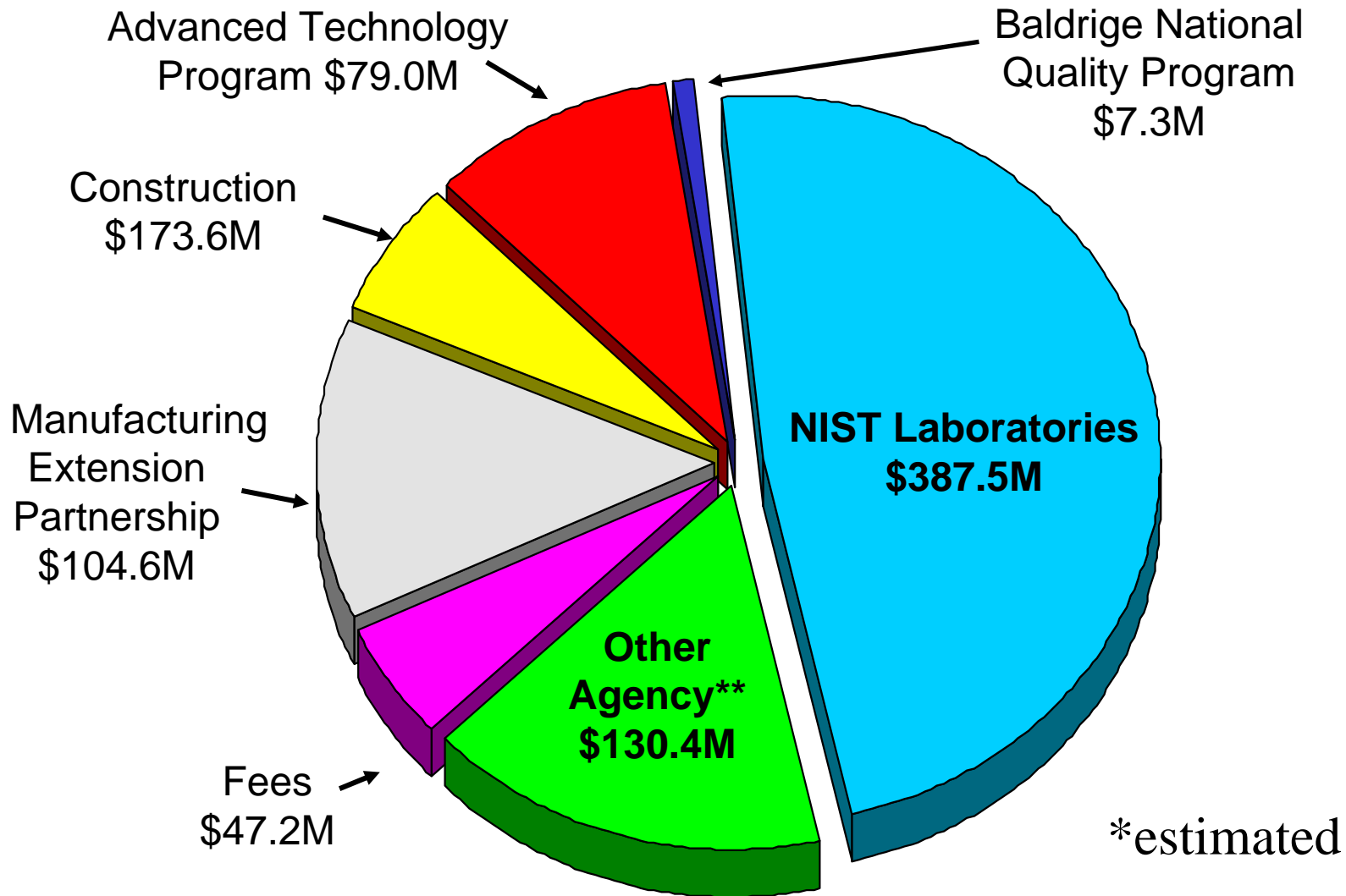


NIST has...

...strong partnerships



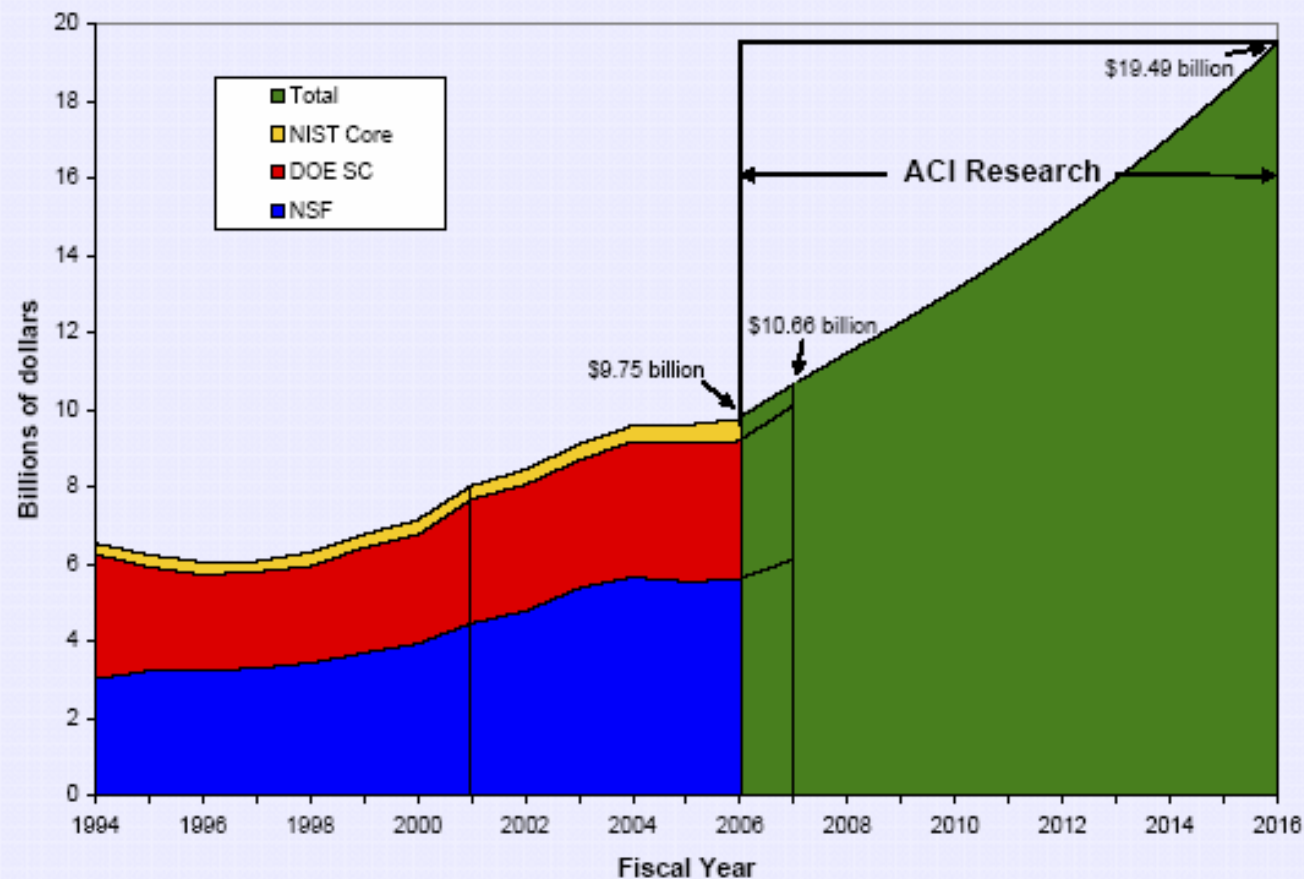
NIST Has a \$930 Million Budget...



Doubling Basic Research

Figure 1: ACI Research Funding, 2007-2016.

American Competitiveness Initiative Research: FY 2007- FY 2016



American Competitiveness Initiative

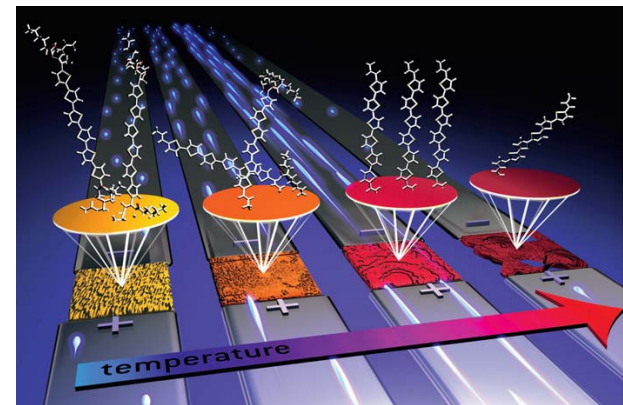


Rapidly developing technologies

Nanotechnology from Discovery to Manufacture
Quantum Information Science
Enabling the Hydrogen Economy
Innovations in Measurement Science
Cyber Security

Critical national assets

NIST Center for Neutron Research
Synchrotron Measurement



Immediate measurement needs

Innovation through Supply Chain Integration
Structural Safety
International Standards and Innovation
Bioimaging
Biometrics

**NIST is here today at the
Advancing Telemedicine Workshop to:**

Listen + Learn + Educate

**Chart a path for public-private
partnerships to advance
telemedicine through the
development of standards and
interoperability.**